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WE have received the *Annuaire du Bureau des Longitudes* for 1897. It contains the usual mass of interesting statistical matter and a series of 'Notices' of more than usual interest. Three of the latter are by the late Professor Tisserand. They are entitled :

1. On the proper motion of the Solar System.

2. On the fourth meeting of the International Committee for the photographic chart of the heavens.

3. On the meeting of the International Committee for fundamental stars.

These notices by Tisserand have a sad as well as scientific interest, for they are followed by the orations delivered at his grave by Poincaré, Janssen and Loewy.

There is also a notice by Poincaré on the Röntgen rays, and one by Janssen on 'Epochs in the Astronomical History of the Planets.' These notices are not technical in character, and all are very interesting. The volume can be obtained for 30 cents, and should be in the hands of all persons interested in any department of astronomy.

WE note the appearance of the British Nautical Almanac for the year 1900. It is in all respects similar to the volume for the preceding year. In glancing over the preface of the work one cannot help noticing how small has been the use made of the theoretical researches of British astronomers. Probably not one formula or constant of importance is taken from a published research of English origin. And where results depend on observational series made in England these results are generally taken from discussions of the English observations by foreign astronomers. It is a truism that science is international, but truisms do not always penetrate government offices. The course of the British authorities must be highly commended, for they have used what they thought was best for science, without regard to the nationality of its origin.

H. J.

SCIENTIFIC NOTES AND NEWS.

PROFESSOR SIMON NEWCOMB and Lord Kelvin have been elected honorary members of the St. Petersburg Academy of Science. Lord Rayleigh and M. Callandreau have been elected corresponding members.

DR. ARTHUR AUWERS, the Berlin astronomer, has been awarded a gold medal by the German Emperor.

PROFESSOR JOSEPH LE CONTE, after attending the meetings of the American and British Associations for the Advancement of Science, and the autumn meeting of the National Academy of Sciences, and presiding over the annual meeting of the Geological Society of America, went to Milledgeville, Ga., and, at the place where he was married fifty years ago, surrounded by friends and relatives, including Professor W. Le Conte Stevens, he celebrated, on January 14th, his golden wedding. Professor Le Conte has now returned to the University of California. Although seventy-four years of age, Professor Le Conte retains all the energy and originality in research, publication and teaching which, during the past fifty years, have accomplished so much for the advancement of science.

HEINRICH GÄTKE, the veteran ornithologist, of Heligoland, died on January 1st, at the ripe age of 83. He is best known from his great work on Bird Migration, which contains the results of more than half a century of close observation at a single point—the rocky islet of Heligoland, in the North Sea. This small island is situated at a point where two great lines of migration meet, and is the most favorable spot known in the world for studying the periodic movements of a very large number of birds. Gätke's work is chiefly valuable as a record of facts of observation ; his deductions are not accepted by most American students of migration.

THE deaths are announced of Isidore Strauss, professor of experimental pathology, at Paris, and known for his important contributions to our knowledge of contagious diseases and bacteriology ; of Jean Hubert Thiry, formerly professor of surgical pathology in the University of Brussels ; of Dr. George Weyer, professor of mathematics and astronomy at the University

of Kiel, and of T. P. Morawitz, the entomologist of St. Petersburg.

WE are glad to learn that Sir Joseph Lister, on being raised to the peerage, has selected the title of Lord Lister and will thus retain the name which he has made eminent.

THE German Emperor has conferred an order of the crown on Professor Linde, of the Polytechnic Institute at Charlottenberg.

THE Kansas Academy of Science, at its recent annual meeting at Topeka, placed the name of Chaplain John D. Parker on the roll of life members, as a recognition of his effective services in organizing science in the West. During the past thirty years he has been one of the founders of the Kansas Academy of Science, Kansas City Academy of Science, Nebraska Academy of Sciences and California Science Association.

THE budget of the Prussian government appropriates 50,000 Marks for investigation on the Röntgen rays. The money is to be used for apparatus to be divided into a number of special appropriations.

THE New York Aquarium at Castle Garden is visited daily by 7,000 people. This large attendance demonstrates the usefulness of such institutions for purposes of instruction and healthful amusement. It is understood that Mayor Strong is in favor of setting aside the land at Bronx Park for the Zoological Park, and it is much to be hoped that arrangements may be carried out without too great delay.

A DISPATCH from Teheran says that 2,500 persons perished as a result of the earthquake which occurred on Kishm Island, in the Persian Gulf, January 11th.

THE Friday evening meetings of the members of the Royal Institution are announced to open on January 22d, with a lecture by Professor Dewar, on 'Properties of Liquid Oxygen,' to be followed on the 29th by a discourse on 'The Polarization of the Electric Ray,' by Professor J. C. Bose, of Presidency College, Calcutta.

THE Geological Society of London will, this year, award its medals and funds as follows: The Wollaston Medal to Mr. W. H. Hudleston; the Murchison Medal and part of the fund to

Mr. Horace B. Woodward; the Lyell Medal and part of the fund to Dr. G. J. Hinde; the Bigsby Medal to Mr. Clement Reid; the proceeds of the Wollaston fund to Mr. F. A. Bather; the balance of the proceeds of the Murchison fund to Mr. S. S. Buckman; and the balance of the proceeds of the Lyell fund to Mr. W. J. Lewis Abbott and Mr. J. Lomas.

THE forty-fourth annual meeting of the American Society of Civil Engineers was opened in New York on January 20th, under the presidency of Mr. T. C. Clarke. The Norman Medal was awarded to Mr. J. E. Greiner for a paper entitled 'What is the Life of an Iron Railroad Bridge?' and the Rowland Prize to Mr. H. S. Coppee for a paper entitled 'Bank Revetment on the Lower Mississippi.' Mr. B. M. Harrod was elected President of the Society for the ensuing year.

THE building of the Bellevue Hospital Medical College, New York, was injured by fire on January 20th. The damage to the building is estimated at \$15,000, and much apparatus has been destroyed.

THE United States Civil Service Commission will hold an examination in Washington and in other cities where there are applicants, commencing on February 10th, to fill a vacancy in the position of expert horticulturist, office of experiment stations, Department of Agriculture, the salary of which is \$1,400 per annum.

PROFESSOR GIUSEPPE SANARELLI, Director of the Uruguayan National Institute of Experimental Hygiene, has reported, to the Academy of Medicine in Rome, the discovery of the bacillus of yellow fever. He will shortly publish the result of his experiments.

THE New York Board of Health has declared pulmonary tuberculosis, or consumption, an infectious and communicable disease, dangerous to public health. The resolution adopted by the Board ranks consumption with diphtheria and measles. The resolution makes it the duty of every physician to report minutely within one week to the sanitary bureau of the Board, concerning everyone sick with consumption whom he attends or who comes under his observation. Further, it orders every consumptive in the city, and every person attending a

consumptive 'to observe and enforce all the sanitary rules and regulations of the Board of Health for preventing the spread of consumption.'

RECORDER GOFF, of New York, in speaking recently before the Medico-Legal Society, called attention to the very unsatisfactory condition of expert testimony before courts of justice. He had observed that juries were universally sceptical in regard to such testimony. He said that he would favor the establishment of a board which would select men who would be qualified to serve as experts.

A NEW quarterly journal, *Archives d'anatomie microscopique*, is announced by Masson et Cie. It will be under the direction of MM. Balbiani and Ranvier, and M. Henneguy will act as managing editor.

WE have already announced the new journal, *Monatschrift für Psychiatrie und Neurologie*, edited by Professors Wernicke and Ziehen. The first number has now been published at Berlin.

La Nature, the French weekly journal of popular science, will hereafter be edited by M. H. Parvil in place of M. Gaston Tissandier, who for twenty-five years has been its editor.

PROFESSOR JAMES SETH has become one of the editors of the *Philosophical Review*, published by Ginn & Co. for Cornell University,

REUTER'S agency states that two Danish officers, MM. Oloufsen and Philipsen, have just arrived in St. Petersburg on their return from a journey of exploration to the Pamir country, where they reached places hitherto untrodden by Europeans. They have brought back with them over 300 photographs of places they have visited and types they have met. During their travels they met, among others, tribes who are still fire-worshippers and totally uncivilized in their mode of life. The men of these tribes, and even their animals, are of very small size, the bulls and cows being no larger than a European foal, the donkeys about the size of a large dog, and the sheep about as large as a small poodle. The use of money is unknown to them, and their only trade consists in the bartering of furs. Women are bought at the rate of five or six cows or fifteen sheep apiece. These natives

are very timid, and on the approach of strangers take to flight. MM. Philipsen and Oloufsen have secured numerous scientific collections, which they intend presenting to the Natural History Museum in Copenhagen, and have also made interesting meteorological observations. In the course of their voyage they occasionally reached a height of 14,000 ft. above the level of the sea.

ACCORDING to the London *Times* an electric omnibus, belonging to the London Electric Omnibus Company and propelled by electricity on the Radcliffe Ward system, has made a successful trial trip. Starting from Northumberland Avenue, it was able to ascend the comparatively steep slope of St. Martin's lane without any difficulty, although it was loaded with all but the full number of passengers it is constructed to carry and the streets were far from being in a good condition. In the crowded traffic of Oxford street it showed itself to be perfectly under the control of the driver as regards both steering and speed. It easily threaded its way among other vehicles and its pace could be regulated at will to pass almost everything else on the road or to crawl along with the slowest, while its powerful brakes enabled it to be pulled up dead within a yard or two. The pneumatic cushions interposed between the frame and the car do much to diminish vibration, and the smoothness and easiness of the running are in marked contrast to the uneasy rumble which usually accompanies London omnibuses.

THE results of the quinquennial census of France, taken on March 29, 1896, show a population of 38,518,975, an increase of 125,027 during the five years. The towns having more than 30,000 inhabitants show an increase of 320,000. Most of the agricultural districts, with the exception of Brittany, show a decrease.

THE London *Times* reports that the Council of the Royal Colonial Institute, for themselves and on behalf of about 4,000 Fellows of the Institute residing in all parts of her Majesty's dominions, have forwarded to the Prime Minister a memorial urging on the government the advisability of taking early steps for the unification

of time at sea, a question which has been brought under the consideration of the Council by the Royal Society of Canada. The memorialists say that the various points connected with civil, nautical and astronomical time at sea appear to have been fully gone into during the past twelve years by various societies and authorities in different countries, and to have been eventually resolved into the simple question of the desirability of advancing astronomical time by twelve hours so as to harmonize it with civil time, for nautical time has in general practice long been assimilated to civil time, and is no longer a matter giving rise to difficulty or discussion. It is believed by the memorialists that the proposed change can be easily introduced with decided advantage to observers, and that the general principle of the unification of time at sea has now an almost universal consensus of opinion in its favor. The advancement of astronomical time by twelve hours so as to assimilate it to civil time, in order that both may be in agreement and begin everywhere at midnight, would require the adaptation of the 'Nautical Almanack,' to the change, and as the 'Nautical Almanack' is of necessity prepared some years in advance, it is submitted that a decision should be arrived at by her Majesty's government with as little delay as possible, in order that the change may take effect at the date indicated by astronomers—viz., the first day of the new century.

THE general report on the operations of the survey of India during the year ending with September, 1895, according to *Nature*, shows that in this period the aggregate area surveyed on all scales amounts to 125,384 miles, exclusive of 5,018 square miles embraced by traverse operations in the central provinces and the north-western provinces and Oude. In the trigonometrical surveys the Upper Burma principal triangulation was carried northwards as well as westwards through Manipur and Assam. In addition to the topographical work accomplished during the year, a detachment with the Pamir commission surveyed 250 square miles, and one with the Chitral relief force surveyed in detail 450 square miles on the 1-inch scale, 215 square miles on the $\frac{1}{2}$ -inch scale, and, approximately, 1,900 square miles on the $\frac{1}{4}$ -inch scale. The re-

sults of the operations of the latter surveyors is that considerable knowledge of the topography has been gained of an area of 3,600 square miles of a country previously practically unknown, and much credit is due to Captain Bythell and the men who served under him for such a satisfactory record of work. Two views, representing the Malakand Pass and the Chitral bridge and fort, have been reproduced by heliogravure to illustrate Captain Bythell's report. A mass of information on the forest survey operations, cadastral surveys, traverse surveys, longitude observations, geographical surveys and reconnaissances, carried out by the survey department under the direction of Colonel C. Strahan, R. E., Surveyor-General of India, is included in the general report.

MR. GEORGE F. KUNZ, in his report to the United States Geological Survey on the productions of precious stones in 1895, states that among the more interesting occurrences and changes in precious stones for the year 1895 may be mentioned: (1) the finding of a 6-carat diamond at a new locality, Saukville, Ozaukee County, Wis.; (2) the diligent search made for monazite in North Carolina and Georgia, resulting in the finding of a number of interesting gems; (3) continued finding of rubies near Franklin, Macon County, N. C.; (4) the discovery of true blue sapphires near Utica, Fergus County, Mont.; (5) the discovery of some remarkable gem tourmaline of extraordinary size and wonderful perfection at the historic Paris Hill locality, Oxford County, Me.; (6) the finding of a large quantity of fine chrysoprase in Tulare County, Cal.; (7) the discovery of an enormous crystal of tourmaline on New York Island; (8) the interesting exhibition of Southern gems at the Cotton States and International Exposition, at Atlanta, Ga., and the presentation of this collection to the Lea collection at the United States National Museum; and (9) the opening of the Golden Gate Park Museum, at San Francisco, with an interesting collection of gems. Among foreign occurrences may be noted: (1) the increased yield of the South African diamond fields and the absorption of the entire yield by the gem markets of the world; (2) the occurrence of rubies of good color and in some abundance in various fields

in Siam; these are very rarely equal to the Burmese, yet they are fine stones, and, although generally much lower in price, a single stone sold for more than \$1,000; (3) the great profusion and beauty of the opal and the large demand for these stones, which were produced in greater quantity, finer quality and at a somewhat lower cost than ever before from the fields at Fermoy, Queensland, and in the new locality at White Cliff, in New South Wales.

THE article by Dr. Dabney in the issue of this JOURNAL for January 15th, pointing out the advantages of a National Department of Science, was prepared at the suggestion of Hon. Gardiner G. Hubbard, who wrote to Dr. Dabney as follows:

1328 CONNECTICUT AVE.,

WASHINGTON, D. C., January 3, 1897.

DR. CHARLES A. DABNEY, JR., *Washington, D. C.*:

DEAR SIR: My attention has been called at different times during the past year to the great number of scientists employed by the government and the large amount of appropriations. I have also observed that the same subject seemed to be treated often under two and sometimes under three departments, thus leading to needless duplication of labor.

I know that your attention has been somewhat called to this subject. I, therefore, venture to ask you, if your time will permit, to prepare an article for publication, which shall bring out fully all these facts, and also suggest a remedy which would seem to be the placing all this scientific work under one department. I know of no one better fitted than yourself to perform this work and am sure that it will be carefully and correctly done.

Very truly yours,

GARDINER G. HUBBARD.

HON. CHARLES W. DABNEY, JR.,

Assistant Secretary of Agriculture.

UNIVERSITY AND EDUCATIONAL NEWS.

THE New York Court of Appeals has decided the Fayerweather will case by affirming the judgment of the lower court. The residuary estate, now amounting to more than \$3,000,000, will consequently be divided equally among the twenty colleges named in the will. The following institutions will each receive more than \$150,000: Amherst, Bowdoin, Dartmouth, Williams, Yale, Columbia, Hamilton, Lafayette, Lincoln, Maryville, Marietta, Adelbert, Wabash,

Park, Wesleyan, Rochester, Cornell, Virginia, Hampton, and the Union Theological Seminary.

A NUMBER of professors of the University of Berlin have asked permission from the Senate to inaugurate a system of university extension lectures. It appears, however, that there is considerable opposition to the plan in Germany, in part because it is supposed that many university professors might favor the views of social democracy.

ACCORDING to the new *Prussian Budget* professors in the University at Berlin will receive an increase of salary of \$500 Marks, and smaller increases in salary are granted to professors in the other Prussian universities and to teachers in the schools.

MR. HAROLD HEATH has been appointed fellow in biology and Mr. J. M. Mathews fellow in chemistry in the University of Pennsylvania.

DR. E. WIECHERT, docent at the University of Königsberg, has been promoted to a professorship. Dr. Willstätter, of Karlsruhe, has qualified as docent in chemistry in the University at Berlin.

DISCUSSION AND CORRESPONDENCE.

SIMPLIFIED SPELLING.

TO THE EDITOR OF SCIENCE: In a book notice sent to you to-day you will observe two instances of the innovation in spelling proposed by Funk & Wagnalls. Instead of 'grouped' and 'addressed,' I have written 'groupt' and 'addrest.' Unless special instructions are given, your compositor and proof-reader will ignore my attempt at reform and print these words according to the prevalent fashion. Of this I cannot complain, for it is certainly the privilege of a journal to unify its pages in the matter of spelling. Neither am I disposed to criticize SCIENCE for not joining in the spelling-reform movement, for it would be unwise for a journal with its own battles to fight to incur the odium which attaches to rational spelling. The prejudices in favor of irrational spelling are so strong and prevalent that they cannot be opposed without a certain measure of sacrifice on the part of the opponent. Nevertheless, it seems to me that SCIENCE may, without harm to itself, allow such of its contributors as have